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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/556,242	11/10/2005	Kevin R. Boyle	GB 030076	6713
65913	7590	01/28/2010		
NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER TRINH, TAN H	
			ART UNIT 2618	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/556,242	Applicant(s) BOYLE, KEVIN R.	
	Examiner TAN TRINH	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-17 and 20 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanford (U.S. patent No. 6,424,300) in view of Rousu (U.S. Pub. No. 2003/0114188).

Regarding claims 1, 9 and 12, Sanford teaches a wireless terminal (601) (fig. 6C) including a substrate (704) having a ground plane (706) thereon (see fig. 6-7A-C, col. 17, lines 8-43), RF antenna components (700) mounted on the substrate and a PIFA (Planar Inverted-F Antenna) (see col. 14, lines 35-42, and col. 15, lines 59-62), having connections electrically (710) coupled to the ground plane (706), and the RF components (710 and 714) characterized in that a notch antenna (701 or 801) (see fig. 7A-C and 8A-D, and col. 4, lines 38-49) is provided in the substrate (704 or 804)) for receiving signals and transmitting signals to configured to selected frequency band (see fig. 6-7 and 10A-C, col. 17, lines 21-36). But Sanford teaches does not mention de-activating circuit for de-activating (switching) the notch antenna.

However, Rousu teaches PIFA (Planar Inverted-F Antenna) and notch passive antenna (see fig. 4A-B and 6A-B, page 3, section [0038]) and controller with a switching circuit for de-activating the passive antenna by de-activating an active RF component or by mechanically retuning a antenna by changing the antenna length (see fig. fig. 4A-B, 5 and 6A-B, page 1-3, sections [0009-0013] and [0027-0028 and [0037-0038])). In this case, the PIFA (Planar Inverted-

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F Antenna) and notch passive antenna and the de-activating an active RF component is also in the substrate, since the antennas 26, 18 and strip-lines or (coplanar transmission line) and sw1 and sw2 (de-activating an active RF component) switching circuit elements built on, for instance, a substantially planar substrate, see fig. 4A-B the antenna element and SW1 and SW2 (de-activating an active RF component) switching circuit elements featuring a dielectric substrate arranged in layer and a shaped conductive trace upon one or more of the surface of the substrate layer, so that the antennas 16, 18 and strip-lines and SW1 and SW2 (de-activating an active RF component) switching circuit elements built on planar substrate (fig. 4A-B).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Sanford with Rousu, thereto in order to provide less current consumption (increasing talk and standby time) and reduced heating (increasing user comfort and reliability) (see suggested by Rousu on page 3, section [0035]).

Regarding claims 2 and 13, Sanford teaches characterized in that the PIFA is a dual band slotted planar patch antenna (see fig. 4-5 and 7-8, col. 1, lines 26-54, col. 8, lines 57-60).

Regarding claims 3, 11 and 15, Rousu teaches characterized in that the notch antenna is passive antenna notch antenna and the de-activating circuit is responsive to activation notch antenna to de-activate the PIFA (Planar Inverted-F Antenna) (see fig. 4 A and B, passive antenna 16 and 18, de-activating circuit SW 1 and SW2, the resonators are shunted by PIN diodes (20) fig. 5, page 3, sections [0027-0028 and 0037-0038]). In this case, activation notch antenna to de-activate other notch antenna or activation the PIFA antenna and de-activate other the PIFA

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antenna is obvious to activation notch antenna to de-activate the PIFA (Planar Inverted-F Antenna).

Regarding claims 4, 14 and 16, Rousu teaches the de-activating circuitry comprises circuit for de-tuning the antenna (see fig. 6A-B, detuning antenna, page 2, sections [0012-0013]).

Regarding claims 5, 10 and 17, Sanford teaches characterized in that capacitance means are connected across the notch for tuning the notch antenna and in that the means for de-activating the notch antenna comprises circuit for shorting the capacitance means (see fig. 6A-B capacitor 612A-B, col. 16, and lines 26-52). In this case, when de-activating the notch antenna is shunt the capacitance 612b.

3. Claims 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanford (U.S. patent No. 6,424,300) in view of Rousu (U.S. Pub. No. 2003/0114188) further in view of Schamberger (U.S. 2003/0117331).

Regarding claims 8 and 20, Sanford teaches PIFA and Notch antenna. But Sanford or Rousu does not mention for measuring the contemporaneous quality of signals received by the PIFA and the notch antenna and for selecting for receiving signals that one of the PIFA and notch antenna receiving the better quality signals. However, such teaching is taught by Schamberger (see fig. 3-4, page 1, section [0007], page 3, section [0032-0034]). In this case, the selecting for receiving signals is on the center slot, since is better than 17 dB.

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Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above combination of the teaching of Sanford and Rousu with Schamberger, thereto in order to select the better receiving signal.

Allowable Subject Matter

4. Claims 6-7 and 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for allowance

5. The following is an examiner's statement of reasons for allowance:

Claims 6-7 and 18-19 are allowed with the same reasons set forth in the previous Office action (paper mailed on 06-19-2008).

Response to Arguments

6. Applicant's arguments filed 10-29-2009 have been fully considered but they are not persuasive.

Applicant argues (03-06-2009) that the reference of Chang is the active antenna and the main reference of Sanford is teaching a passive antenna, so that the both antenna is not operable. However, examiner changed the new art using the passive antenna of Rousu and switching circuit control by controller by switching on/off the switching diode to select the TX or RX antenna and also tuning or de-tuning the antenna for new ground(s) of rejection.

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Applicant argues (10-29-2009) that the reference of Rousu (U.S. Pub. No. 2003/0114188), the de-activating circuits of Rousu does not mounted on the substrate.

However, the examiner does not agree. Since the reference of Rousu teaches the PIFA (Planar Inverted-F Antenna) and notch passive antenna and the de-activating an active RF component is also in the substrate (see fig. 4A-B, page 1-3, sections [0009-0013] and [0027-0028 and [0037-0038]], since the antennas 16, 18 and strip-lines or (coplanar transmission line) and sw1 and sw2 (de-activating an active RF component) switching circuit elements built on, for instance, a substantially planar substrate, see fig. 4A-B the antenna elements and SW1 and SW2 (de-activating an active RF component) switching circuit elements featuring a dielectric substrate arranged in layer and a shaped conductive trace on the surface of the substrate layer, so that the antennas 26, 18 strip-lines and SW1 and SW2 (de-activating an active RF component) switching circuit elements built on planar substrate. Moreover, the main reference of Sanford teaches a wireless terminal (601) (fig. 6C) including a substrate (704) having a ground plane (706) thereon (see fig. 6-7A-C, col. 17, lines 8-43), RF antenna components (700) mounted on the substrate and a PIFA (Planar Inverted-F Antenna) (see col. 14, lines 35-42, and col. 15, lines 59-62), having connections electrically (710) coupled to the ground plane (706), and the RF components (710 and 714) characterized in that a notch antenna (701 or 801) (see fig. 7A-C and 8A-D, and col. 4, lines 38-49) is provided in the substrate (704 or 804)) for receiving signals and transmitting signals to configured to selected frequency band (see fig. 6-7 and 10A-C, col. 17, lines 21-36). Therefore, the combination of the Sanford and Rousu is teaching the limitation of the claim.

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In addition, in response to applicant's argument that there is no suggestion to combine the references (see page 7 of applicant's remarks), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine applied references are found in the references themselves (i.e., to obtain flexible choices as stated in the "Purpose" section in Kazuyoshi).

For the foregoing reasons, the examiner contends that the rejection to claims 1-5 and 9-17 are proper.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

*Hand-delivered responses should be brought to the Customer Service Window (now located at the **Randolph Building, 401 Dulany Street, Alexandria, VA 22314**).*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

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10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh
Division 2618
January 24, 2010

/TAN TRINH/
Primary Examiner, Art Unit 2618